

## Early Season Potatoes Yields and Tuber Size Distribution

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Market research has shown that micro-sized potatoes could be grown as a high value alternative vegetable crop for retail in supermarkets, roadside stands, farmers markets, CSA's and for direct sale to restaurants. These speciality potatoes, new freshly dug "baby" potatoes, are valued by consumers for reasons including freshness, taste, size, and shape. If methods for producing these types of potatoes could be developed so that they could be harvested in early July or by the July 4 weekend, then growers would be able to command high prices.

In 2002 we conducted a replicated experiment to determine the preferred cultural management for production of small-sized potatoes aiming for a harvest ready for market in early July. Two standard potato varieties, one white skinned (Superior) and one red skinned (Red Norland), were seeded on May 1, 2002 in three densities (3, 6, 9 inches between seed pieces), with and without row covers (May 4 to June 10). The hypothesis behind this is that high densities will result in a greater abundance of small-sized potatoes, and that row covers during the early season when temperatures are cooler, will advance an earlier harvest. A shortened growing period may eliminate the need for fungicides, because diseases are of greater concern later in the season. We believe this can be an attractive option for certain growers, including organic producers.

The early "baby" potato study was harvested first on July 15 (Figure 1) and a second harvest was made on August 7 (Figure 2). While the row cover had a small effect on the closer spacing (higher density) for the first harvest, there was no yield benefit to the 6 and 9 inch spacings, and there was no benefit from the row cover for the later harvest (157 cwt/ac without row cover vs. 129 cwt/ac with row cover). Potato tuber yield was increased with closer spacing of potato seed pieces at both harvests.

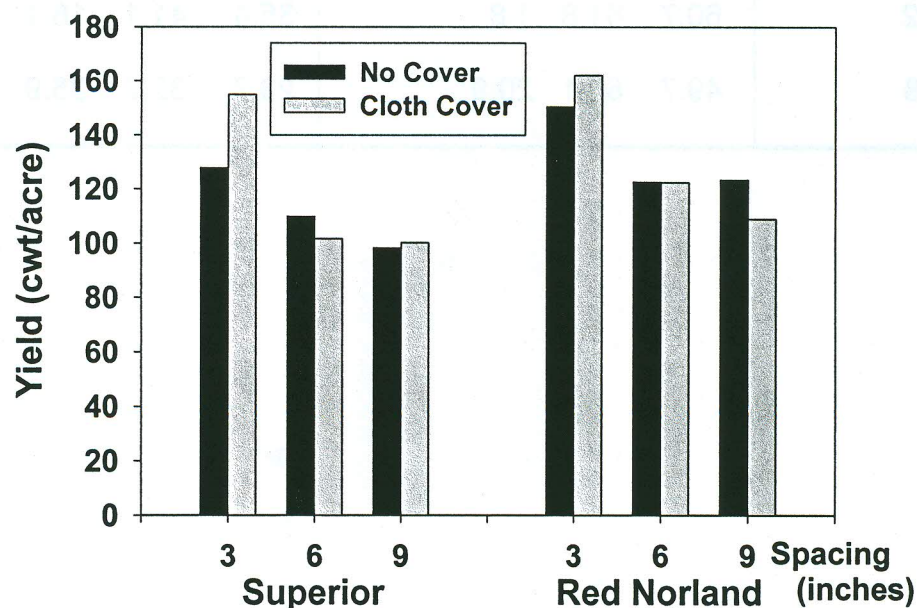


Figure 1. Yield of potato harvested July 15, 2002 at UMass Agronomy Research Farm.

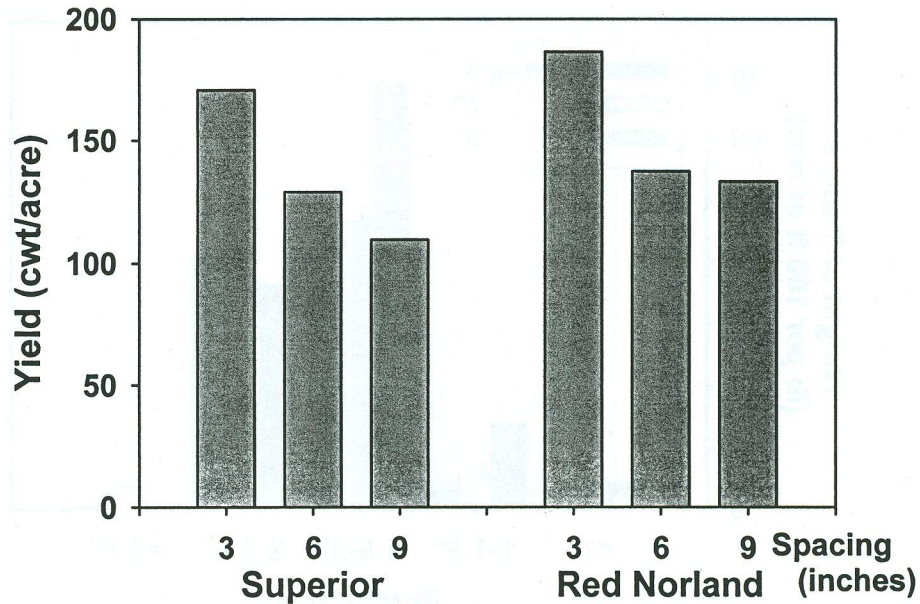


Figure 2. Yield of potato harvested August 7, 2002 at UMass Agronomy Res. Farm.

Size of potato tubers harvested was influenced by seed spacing, with more than double the number of small potatoes for the closer spacing compared to the medium spacing. Although the small potatoes were numerous at the closer spacing (Figure 3.), the weight of these was skewed in favor of the larger sized potatoes (Figure 4). However, since the small potatoes are commonly sold in small containers similar to strawberries, at a premium, this would not be a negative.

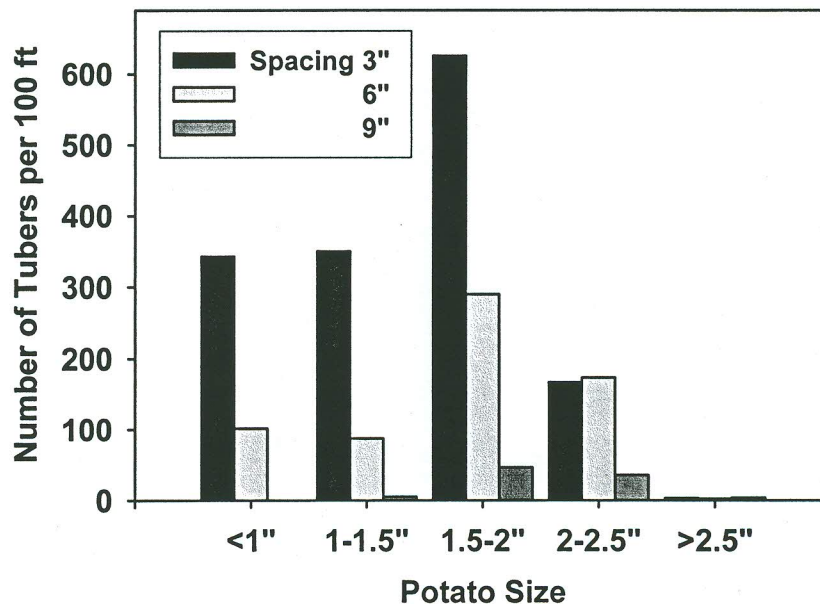


Figure 3. Tuber size number distribution for the August 7 harvest date.

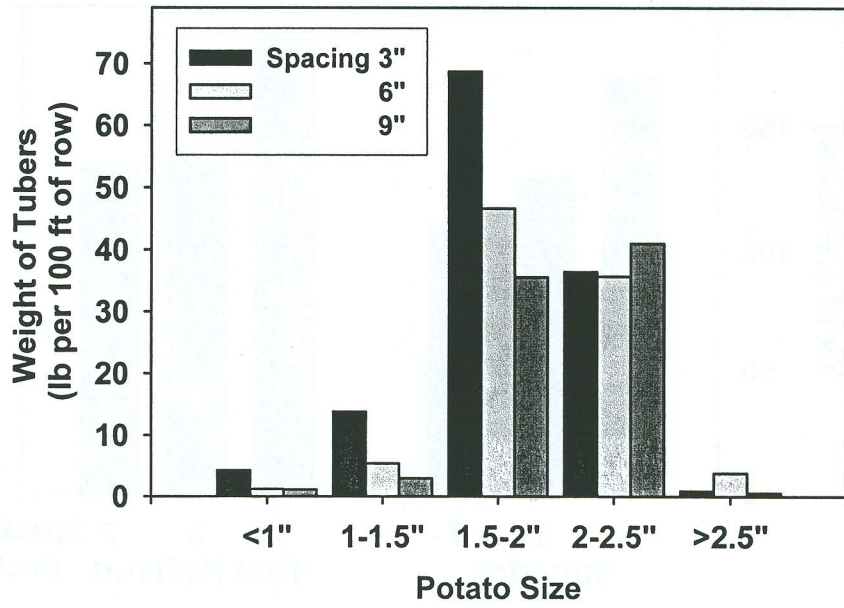


Figure 4. Tuber size weight distribution for the August 7 harvest date.